OPERATING INSTRUCTIONS

BITZER AUSTRALIA
BUFFALO TRIDENT HEAT EXCHANGE

LDV-D SERIES
- Air Cooled Condensers -

Models

LDV-D-4R-2F	**LDV-D-4R-3F**	**LDV-D-4R-4F**
LDV-D-6R-2F	**LDV-D-6R-3F**	**LDV-D-6R-4F**
LDV-D-4R-2F-2M	**LDV-D-4R-3F-2M**	**LDV-D-4R-4F-2M**
LDV-D-6R-2F-2M	**LDV-D-6R-3F-2M**	**LDV-D-6R-4F-2M**

Content

1 Important Recommendations

- LDV-D air cooled condensers are intended for installation only by **Qualified Refrigeration Personnel** and are to be installed in accordance with the guidelines mentioned in this manual.

- All electrical work is to be carried out by **Qualified Electrical Personnel** and to be in accordance with local electrical regulations.

2 Safety Recommendations

- Condensers are supplied with a **Nitrogen Holding Charge. (Release pressure fully before accessing the connection points).**

- Electrical power is to be **isolated** prior to the commencement of any electrical work.

- During normal operation **Pressurised Refrigerant** is contained within the condenser. Extreme care should be taken to avoid leakage, as personal injury may occur. (**Avoid the use of sharp objects in close proximity to refrigeration piping**).

- Extensive gas loss in enclosed area may result in asphyxiation.
- Contact with refrigerant may cause personal injury (freeze burns).
- Normal operating conditions involve **hot** surfaces within the condenser. Extreme care should be taken to avoid contact.
- Avoid contact with condenser fins as sharp edges may cause personal injury.
- Insertion of any object into condenser fans is to be avoided as this may result in personal injury and/or equipment damage.
- Operating sound pressure levels may cause discomfort. Refer to catalogue for calculated sound levels.

3 Application Ranges

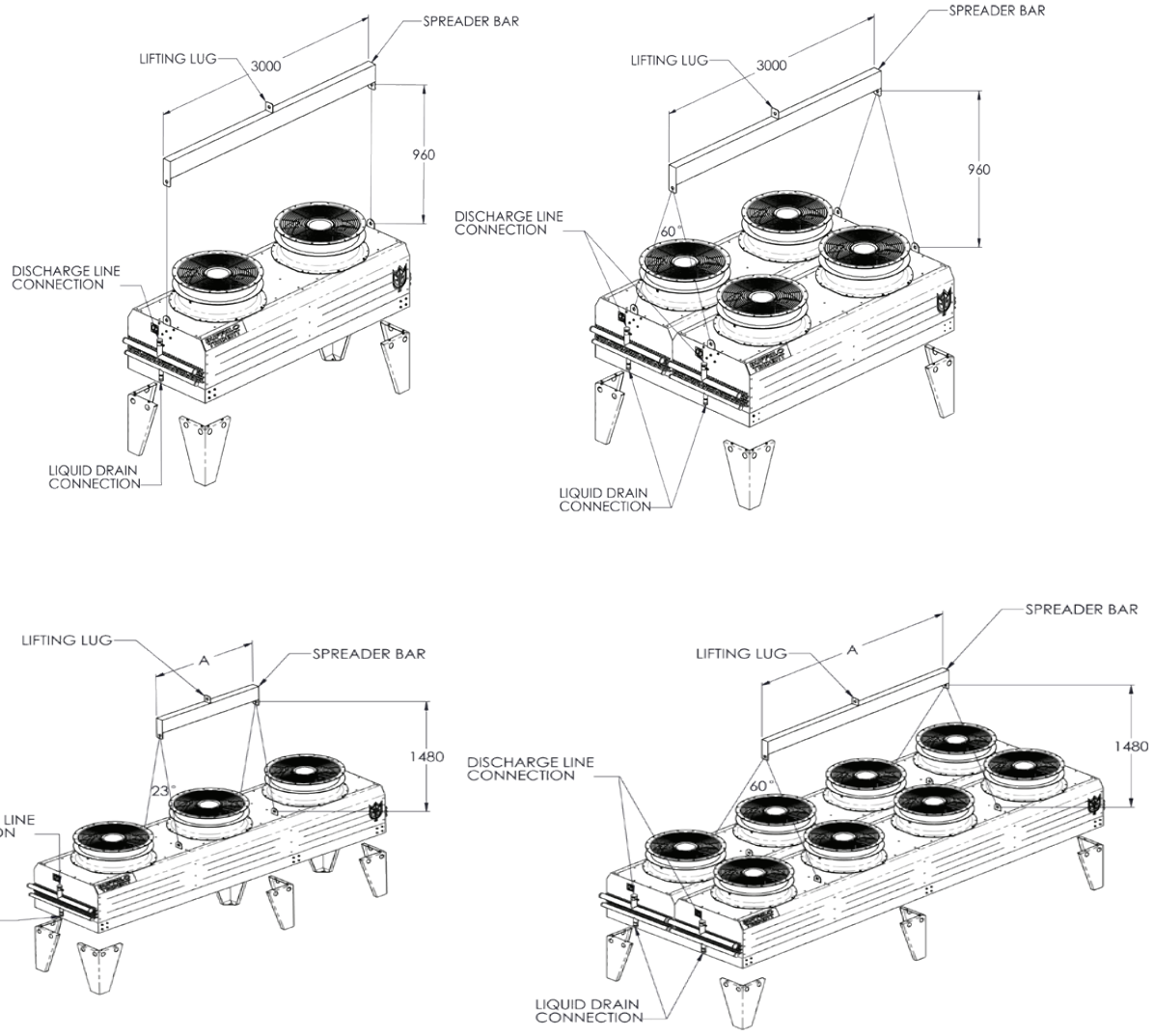
- These condensers are intended for use in commercial refrigeration systems with a maximum operating ambient temperature of approximately 60°C (**special designs available on application)**.
- Recommended refrigerants: **HFCs, HCFCs** (also suitable for CFCs).
- This series of condenser is **not suitable** for use with NH_3 (Ammonia) or R744 (CO_2).
- Standard condensers are not to be installed in hazardous/combustible environments **(special designs available on application).**

4 Installation Guide

The LDV-D Series of Air Cooled Condensers are suitable for **Vertical** air flow.

a) Mounting - Vertical Air Flow

- Remove the condenser from its crate.
- Vertical air flow condensers are shipped without legs fitted.
- Legs are supplied within each LDV-D Series condenser crate.
- Using an appropriate lifting device (refer **Figure 1** for recommended lifting methods), attach the legs to the condenser using the bolt kit supplied.
- Place the condenser into the installation position and secure using the mounting holes located in the legs.



No. Of Fans	DIM 'A'
3	1500
4	3000
3 X 2 MODULES	1500
4 X 2 MODULES	3000

Figure 1

Please Note:

- Minimum diameter of fixing bolts is to be 12.70mm (½")
- The use of lifting devices during installation is recommended where applicable.
- Observe recommended condenser mounting locations as per **Figure 2.1 and Figure 2.2**.
- Remove the transport brackets from the LDV-D Series condensers.
- Ensure the condenser is installed level, to avoid liquid locking within the condenser..
- Refrigeration piping connections should be carried out in accordance with the current "Refrigeration Code of Good Practice"* (beware of **HOT** surfaces present during the welding procedure).

RECOMMENDED MOUNTING LOCATIONS FOR VERTICAL AIR FLOW CONDENSERS

Note: All clearance dimensions listed below are calculated with standard issue Buffalo Trident condenser legs fitted

Condensers installed on a solid deck

Model/s		LDV-D-4R-2F LDV-D-6R-2F	LDV-D-4R-3F LDV-D-6R-3F	LDV-D-4R-4F LDV-D-6R-4F	LDV-D-4R-2F-2M LDV-D-6R-2F-2M	LDV-D-4R-3F-2M LDV-D-6R-3F-2M	LDV-D-4R-4F-2M LDV-D-6R-4F-2M
Dimensions	A	700	900	1000	1000	1300	1500
(mm)	B	1100	1300	1500	1500	1900	2200
	C	900	1100	1300	1300	1600	1800
	D	1400	1700	2100	2100	2500	2900
	E	900	1100	1300	1300	1600	1800

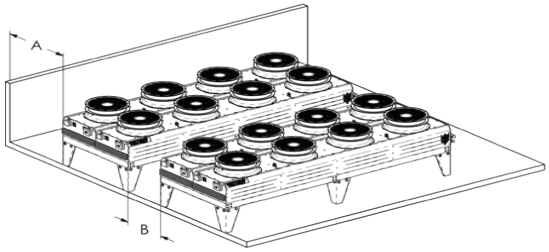
Condensers installed on an open mesh platform 0.5m high from a solid deck

Model/s		LDV-D-4R-2F LDV-D-6R-2F	LDV-D-4R-3F LDV-D-6R-3F	LDV-D-4R-4F LDV-D-6R-4F	LDV-D-4R-2F-2M LDV-D-6R-2F-2M	LDV-D-4R-3F-2M LDV-D-6R-3F-2M	LDV-D-4R-4F-2M LDV-D-6R-4F-2M
Dimensions	A	700	900	1000	1000	1300	1500
(mm)	B	800	1000	1100	1100	1400	1600
	C	900	1100	1300	1300	1600	1800
	D	1100	1300	1500	1500	1900	2200
	E	1100	1400	1600	1600	2000	2300

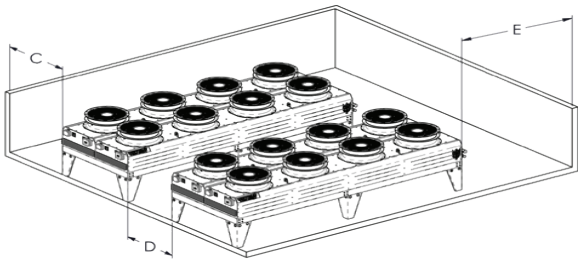
Condensers installed on an open mesh platform 1.0m high from a solid deck

Model/s		LDV-D-4R-2F LDV-D-6R-2F	LDV-D-4R-3F LDV-D-6R-3F	LDV-D-4R-4F LDV-D-6R-4F	LDV-D-4R-2F-2M LDV-D-6R-2F-2M	LDV-D-4R-3F-2M LDV-D-6R-3F-2M	LDV-D-4R-4F-2M LDV-D-6R-4F-2M
Dimensions	A	700	900	1000	1000	1300	1500
(mm)	B	500	700	800	800	1000	1100
	C	900	1100	1300	1300	1600	1800
	D	700	900	1000	1000	1300	1500
	E	1400	1700	1900	1900	2400	2700

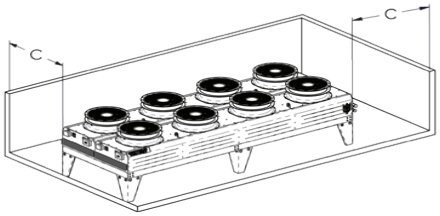
Figure 2.1 - Part 1/2



Installation with solid air restriction to 1 side of platform



For a multiple condenser:
Installation with solid air restriction to 1 side of 1 end of platform



For an individual condenser:
Installation with solid air restriction to 1 side of 1 end of platform

Figure 2.1 - Part 2/2

Note: Maximum height of solid air restriction from condenser platform is 2.8m.

For alternative condenser deck arrangements, please contact BITZER Australia.

RECOMMENDED MOUNTING LOCATIONS FOR VERTICAL AIR FLOW CONDENSERS

Note: All clearance dimensions listed below are calculated with standard issue Buffalo Trident condenser legs fitted

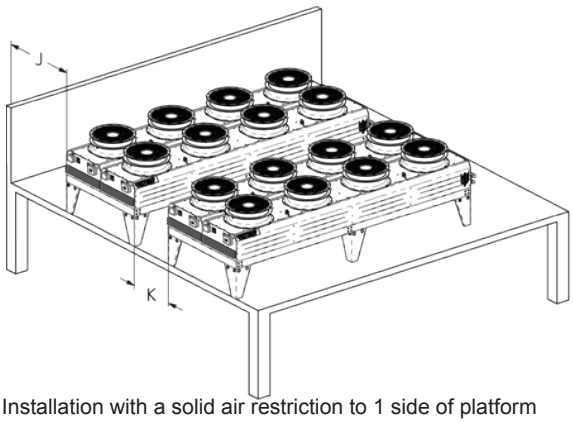
Condensers installed on an open mesh platform 0.5m high from a solid deck
NOTE: The solid air restrictions are level with the condenser platform

Model/s		LDV-D-4R-2F LDV-D-6R-2F	LDV-D-4R-3F LDV-D-6R-3F	LDV-D-4R-4F LDV-D-6R-4F	LDV-D-4R-2F-2M LDV-D-6R-2F-2M	LDV-D-4R-3F-2M LDV-D-6R-3F-2M	LDV-D-4R-4F-2M LDV-D-6R-4F-2M
Dimensions	J	700	700	700	700	800	1000
(mm)	K	800	1000	1100	1100	1400	1600
	L	700	700	800	800	1100	1300
	M	1100	1300	1500	1500	1900	2200
	N	900	1100	1300	1300	1600	1800

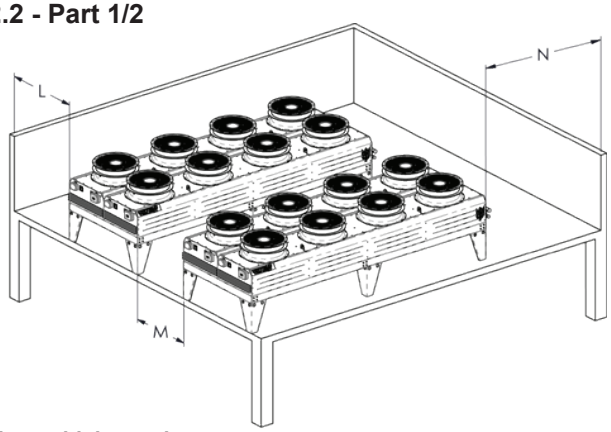
Condensers installed on an open mesh platform 1.0m high from a solid deck
NOTE: The solid air restrictions are level with the condenser platform

Model/s		LDV-D-4R-2F LDV-D-6R-2F	LDV-D-4R-3F LDV-D-6R-3F	LDV-D-4R-4F LDV-D-6R-4F	LDV-D-4R-2F-2M LDV-D-6R-2F-2M	LDV-D-4R-3F-2M LDV-D-6R-3F-2M	LDV-D-4R-4F-2M LDV-D-6R-4F-2M
Dimensions	J	700	700	700	700	700	700
(mm)	K	500	700	800	800	1000	1100
	L	700	700	700	700	700	800
	M	700	900	1000	1000	1300	1500
	N	900	1100	1300	1300	1600	1800

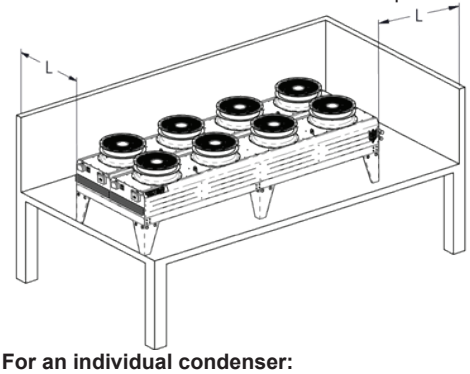
Figure 2.2 - Part 1/2



Installation with a solid air restriction to 1 side of platform
Note: Solid air restriction is level with the platform



For multiple condensers:
Installation with a solid air restriction to 1 side and 1 end of platform
Note: Solid air restriction is level with the platform



For an individual condenser:
Installation with a solid air restriction to 1 side and 1 end of platform
Note: Solid air restriction is level with the platform

Figure 2.2 - Part 2/2

Note: Maximum height of solid air restriction from condenser platform is 2.8m.

For alternative condenser deck arrangements, please contact BITZER Australia.

5 ELECTRICAL CONNECTIONS

- EC Fan motors are suitable for 400 Volt ±10%, 50 Hz operation.
- All three phase motors are pre-wired to an independent isolation switch within an IP56 rated electrical junction box mounted on the condenser.
- These motors are to be wired in accordance with **Figure 3** (wiring diagram R55000079).

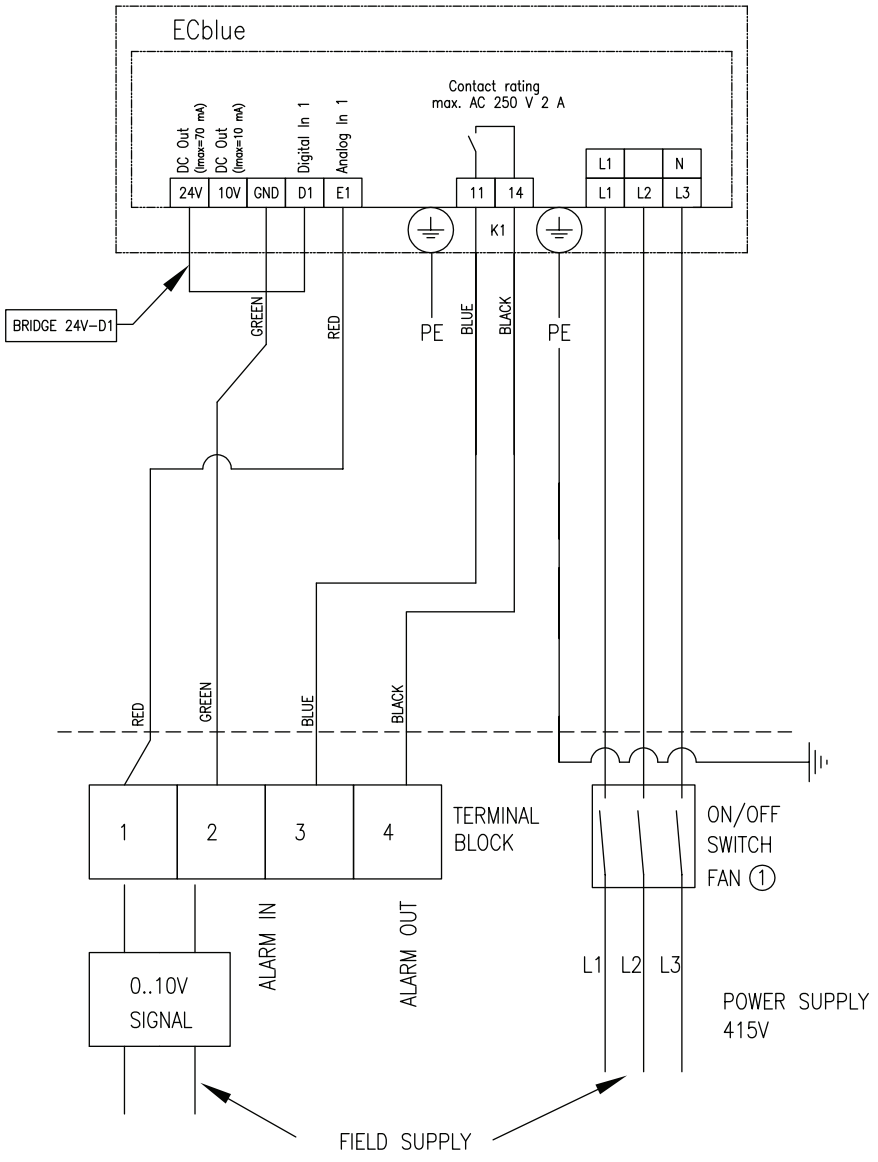


Figure 3

EC wiring diagram - R55000079

6 COMMISSIONING INSTRUCTIONS

- Leak testing should be carried out in accordance with the current "Refrigeration Code of Good Practice"*.
- Following leak testing, the system should be evacuated using accepted refrigeration practices. The vacuum pump should be connected to both the high and low pressure sides of the system with all shut-off valves open.
- Refrigerant charging should be carried out in accordance with the current "Refrigeration Code of Good Practice"*.
- **Extreme** care should be taken to avoid direct contact with liquid refrigerant (freeze burns).
- Ensure the electrical wiring is in accordance with local electrical regulations and ensure fan motor direction is correct.

7 MAINTENANCE INSTRUCTIONS

- Buffalo Trident condensers require low maintenance apart from regular cleaning of the fin face. Frequency is dependent upon the operating environment of the condenser.
- It is recommended that fin surfaces are cleaned using a soft bristle brush and/or low pressure water, taking care to avoid all electrical components **(electrical power must be isolated prior to cleaning).**
- All fan motors contain bearings and are maintenance free.

8 DE-COMMISSIONING INSTRUCTIONS

- Pump down refrigeration system into the receiver or suitable container. (As per "Refrigeration Code of Good Practice" *)
- Isolate power and remove electrical wiring (**remove earth wire last**) and associated components where necessary.
- Disconnect refrigeration piping and seal both the system and condenser connections **(ensure that positive/negative pressure does not exist in condenser prior to disconnection).**
- Condenser can now be removed from location (the use of lifting devices during removal is recommended where applicable).

*** "Code of Good Practice" produced in conjunction with AFCAM.**

9 MANUFACTURER

- Our products are manufactured in compliance with applicable international standards and regulations. If you have any questions about how to use our products or if you are planning special applications please contact:

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10 SERVICE ADDRESS

- For local support please refer to our website www.bitzeravp.com.au for a list of our nearest branch office.

NOTES

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